We claim:

1. A gripping shaft having an elongated cylindrical body with two, opposite end portions, said end portions defining a shaft longitudinal axis of the shaft, said shaft having an intermediate body portion between the opposite end portions, comprising:

a generally cylindrical light weight tube having an internal wall, an external wall, and two opposite ends joining the shaft end portions, said opposite ends defining a tube longitudinal axis, said tube being made from a material having low inertia, high resistance to torsional deflection and high bending stiffness;

a plurality of elongated, parallel, longitudinal rails radially attached to the tube external wall and forming, in conjunction with fiber tube, the shaft intermediate body portion, said rails lying in longitudinal planes parallel to the tube and shaft longitudinal axes, said rails being equally spaced about the tube external wall, said individual rails assembled circumferentially creating a cylindrical profile termed a gripping shaft outer diameter,

said rails containing a plurality of gripping elements, sliding strips and rotational balance correction weights;

a protective end external sleeve forming each said shaft end portion and positioned about and joined to the tube external wall, said protective end external sleeve having an inner surface and an outer surface, said protective ends being made from a material having a high wear resistance, high impact and shock resistance, and dimensional stability; and

an inner sleeve having an inner surface and an outer surface, positioned within and joined to the tube internal wall beginning approximately at the junction between shaft intermediate portion and shaft end portion and extending toward the shaft end a predetermined distance.

2. A gripping shaft as recited in claim 1, wherein:

each said longitudinal rail has an inner surface and an outer surface, said rail inner surface matching tangentially the tube external wall, said rail outer surface having two longitudinal channels, a first channel and a second channel, said second channel having a subchannel formed therein, said subchannel providing means for holding and positioning weights for balancing the gripping shaft, said second channel providing means for holding sliding strips which protrude above the rail outer surface, said first channel containing a gripping element comprised of:

an elongated expandable pneumatic bladder;

two elongated, protective polymer strips placed under and over the bladder;

an elongated rubber gripping element placed over one of said polymer strips adjacent the rail outer surface.

3. A gripping shaft as recited in claim 2, wherein:

each protective end external sleeve has a plurality of channels formed therein corresponding to the rail first channel, said gripping elements continuing through the protective end channels and terminating near to the gripping shaft end portions, said bladder having an end terminating in a valve assembly interconnected to an air manifold.

4. A gripping shaft as recited in claim 3, wherein:

said tube is made from a material dissimilar to said rails, protective end external sleeves and inner sleeve.

5. A gripping shaft as recited in claim 4, wherein:

said tube is made of a carbon finer material.

6. A gripping shaft as recited in claim 5, wherein:

said rails are made from aluminum.

7. A gripping shaft as recited in claim 6, wherein:

said inner sleeve and protective end external sleeves are made from steel.

8. A gripping shaft as recited in claim 7, wherein:

said sliding strips are made from an ultra-high molecular weight polymer.

9. A gripping shaft as recited in claim 8, wherein:

the rails are attached to the tube utilizing a threaded fastener connection with slotted holes in the rails.

10. A gripping shaft as recited in claim 9, wherein:

said first channel, second channel and subchannel each have an interlocking cross section.

11. A gripping shaft as recited in claim 10, wherein:

said weights are comprised of flat bar stock.